



#7

SEQUENCE LISTING

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<120> HEREGULIN VARIANTS

<130> 402E-476112US

<140> US 10/082,747

<141> 2002-02-22

<150> US 09/101,544

<151> 1998-07-17

<150> PCT/US/98/01579

<151> 1998-02-10

<150> US 08/799,054

<151> 1997-02-10

<160> 116

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 71

<212> PRT

<213> Homo sapiens

<220>

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Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn

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10

15

Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser Phe Tyr Lys His Leu Gly Ile Glu Phe Met Glu Ala  
 50 55 60  
 Glu Glu Leu Tyr Gln Lys Arg  
 65 70

<210> 2  
 <211> 66  
 <212> PRT  
 <213> Homo sapiens

<400> 2  
 Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Gln Pro Gly Phe Thr Gly Ala Arg Cys Thr Glu Asn  
 35 40 45  
 Val Pro Met Lys Val Gln Asn Gln Glu Lys Ala Glu Glu Leu Tyr Gln  
 50 55 60  
 Lys Arg  
 65

C1  
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<210> 3  
 <211> 63  
 <212> PRT  
 <213> Homo sapiens

<400> 3  
 Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser Phe Tyr Lys Ala Glu Glu Leu Tyr Gln Lys Arg  
 50 55 60

<210> 4  
 <211> 65

<212> PRT

<213> Homo sapiens

<400> 4

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
20 25 30  
Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
35 40 45  
Val Met Ala Ser Phe Tyr Ser Thr Ser Thr Pro Phe Leu Ser Leu Pro  
50 55 60  
Glu  
65

<210> 5

<211> 66

<212> PRT

<213> Rattus rattus

<400> 5

Ser His Leu Ile Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Phe Thr Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
20 25 30  
Leu Cys Lys Cys Gln Pro Gly Phe Thr Gly Ala Arg Cys Thr Glu Asn  
35 40 45  
Val Pro Met Lys Val Gln Thr Gln Glu Lys Ala Glu Glu Leu Tyr Gln  
50 55 60  
Lys Arg  
65

<210> 6

<211> 71

<212> PRT

<213> Rattus rattus

<400> 6

Ser His Leu Ile Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Phe Thr Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
20 25 30

Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser Phe Tyr Lys His Leu Gly Ile Glu Phe Met Glu Ala  
 50 55 60  
 Glu Glu Leu Tyr Gln Lys Arg  
 65 70

<210> 7  
 <211> 63  
 <212> PRT  
 <213> Rattus rattus

<400> 7  
 Ser His Leu Ile Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Thr Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser Phe Tyr Lys Ala Glu Glu Leu Tyr Gln Lys Arg  
 50 55 60

<210> 8  
 <211> 64  
 <212> PRT  
 <213> Rattus rattus

<400> 8  
 Ser His Leu Ile Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Thr Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Gln Pro Gly Phe Thr Gly Ala Arg Cys Thr Glu Asn  
 35 40 45  
 Val Pro Met Phe Tyr Ser Thr Ser Thr Pro Phe Leu Ser Leu Pro Glu  
 50 55 60

<210> 9  
 <211> 81  
 <212> PRT  
 <213> Rattus rattus

<400> 9

Ser His Leu Ile Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Thr Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Gln Pro Gly Phe Thr Gly Ala Arg Cys Thr Glu Asn  
 35 40 45  
 Val Pro Met Phe Tyr Ser Met Thr Ser Arg Arg Lys Arg Gln Glu Thr  
 50 55 60  
 Glu Lys Pro Leu Glu Arg Lys Leu Phe His Ser Leu Val Lys Glu Ser  
 65 70 75 80  
 Lys

<210> 10

<211> 65

<212> PRT

<213> Homo sapiens

<400> 10

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser Phe Tyr Ser Thr Ser Thr Pro Phe Leu Ser Leu Pro  
 50 55 60  
 Glu  
 65

<210> 11

<211> 65

<212> PRT

<213> Homo sapiens

<400> 11

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45

Val Met Ala Ser Phe Tyr Ser Thr Ser Thr Pro Phe Leu Ser Leu Pro  
 50 55 60  
 Glu  
 65

<210> 12  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 12  
 Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser Phe Tyr Ser Thr Ser Thr Pro Phe Leu Ser Leu Pro  
 50 55 60  
 Glu  
 65

<210> 13  
 <211> 71  
 <212> PRT  
 <213> Gallus domesticus

<400> 13  
 Ser His Leu Thr Lys Cys Asp Ile Lys Gln Lys Ala Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Tyr Met Val Lys Asp Leu Pro Asn Pro Pro Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser Phe Tyr Lys His Leu Gly Ile Glu Phe Met Glu Ala  
 50 55 60  
 Glu Glu Leu Tyr Gln Lys Arg  
 65 70

<210> 14  
 <211> 49  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Variant of the human heregulin-beta1 EGF-like domain  
containing a deletion of human heregulin-beta1 residues  
202-204

<400> 14

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Phe Met Val Lys Asp Pro Ser Arg Tyr Leu Cys Lys  
20 25 30  
Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Met Ala  
35 40 45  
Ser

<210> 15

<211> 48

<212> PRT

<213> Homo sapiens

<400> 15

Asn Ser Asp Ser Glu Cys Pro Leu Ser His Asp Gly Tyr Cys Leu His  
1 5 10 15  
Asp Gly Val Cys Met Tyr Ile Glu Ala Leu Asp Lys Tyr Ala Cys Asn  
20 25 30  
Cys Val Val Gly Tyr Ile Gly Glu Arg Cys Gln Tyr Arg Asp Leu Arg  
35 40 45

<210> 16

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 16

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Phe Met Val Lys Asp Pro Ser Arg Tyr Leu Cys Lys  
20 25 30

Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
 35 40 45  
 Ser

<210> 17  
 <211> 52  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

<400> 17  
 Trp Glu Leu Val Pro Cys Gly Trp Asp Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Ile Ala Ser  
 50

<210> 18  
 <211> 49  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

C1  
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 <400> 18  
 Trp Glu Leu Val Pro Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Tyr Lys Val Arg Ile Tyr Gly Tyr Leu Met Cys Lys  
 20 25 30  
 Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
 35 40 45  
 Ser

<210> 19  
 <211> 49



<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 19  
Trp Glu Leu Val Pro Cys Gly Trp Asp Arg Glu Gly Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Tyr Lys Val Arg Ile Tyr Gly Tyr Leu Met Cys Lys  
20 25 30  
Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
35 40 45  
Ser

<210> 20  
<211> 49  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 20  
Trp Glu Leu Val Pro Cys Gly Trp Asp Arg Glu Gly Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Tyr Lys Val Arg Ile Tyr Arg Tyr Arg Met Cys Lys  
20 25 30  
Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
35 40 45  
Ser

<210> 21  
<211> 49  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 21

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Tyr Gly Tyr Leu Met Cys Lys  
 20 25 30  
 Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
 35 40 45  
 Ser

<210> 22  
 <211> 52  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

<400> 22  
 Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Tyr Arg Val Lys Thr Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Met Ala Ser  
 50

<210> 23  
 <211> 49  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

<400> 23  
 Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Tyr Gly Tyr Leu Met Cys Lys  
 20 25 30  
 Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Met Ala  
 35 40 45  
 Ser

cal  
 cont

<210> 24  
 <211> 49  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

<400> 24  
 Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Tyr Arg Val Lys Thr Tyr Gly Tyr Leu Met Cys Lys  
 20 25 30  
 Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Met Ala  
 35 40 45  
 Ser

<210> 25  
 <211> 52  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

<400> 25  
 Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Ile Ala Ser  
 50

<210> 26  
 <211> 49  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 26

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Tyr Arg Val Lys Thr Tyr Gly Tyr Leu Met Cys Lys  
20 25 30  
Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Met Ala  
35 40 45  
Ser

<210> 27

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 27

C!  
Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Tyr Arg Val Lys Thr Tyr Gly Tyr Leu Met Cys Lys  
20 25 30  
Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
35 40 45  
Ser

<210> 28

<211> 52

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 28

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15

Gly Gly Glu Cys Tyr Arg Val Lys Thr Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Ile Ala Ser  
 50

<210> 29  
 <211> 52  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

<400> 29  
 Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Tyr Arg Val Lys Thr Leu Ser Asn Pro Ser Arg Tyr  
 20 25 30  
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr  
 35 40 45  
 Val Ile Ala Ser  
 50

<210> 30  
 <211> 49  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant of the human heregulin-beta1 EGF-like domain

<400> 30  
 Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Phe Met Val Lys Asp Tyr Gly Tyr Leu Met Cys Lys  
 20 25 30  
 Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
 35 40 45  
 Ser

C!  
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<210> 31  
<211> 49  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 31  
Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Tyr Arg Val Lys Thr Tyr Gly Tyr Leu Met Cys Lys  
20 25 30  
Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Ile Ala  
35 40 45  
Ser

<210> 32  
<211> 49  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant of the human heregulin-beta1 EGF-like domain

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<400> 32  
Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn  
1 5 10 15  
Gly Gly Glu Cys Tyr Arg Val Lys Thr Tyr Gly Tyr Leu Met Cys Lys  
20 25 30  
Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln His Tyr Val Ile Ala  
35 40 45  
Ser

<210> 33  
<211> 49  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant of the human heregulin-beta1 EGF-like domain

<400> 33  
 Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys Val Asn  
 1 5 10 15  
 Gly Gly Glu Cys Tyr Arg Val Lys Thr Tyr Gly Tyr Leu Met Cys Lys  
 20 25 30  
 Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln His Tyr Val Ile Ala  
 35 40 45  
 Ser

<210> 34  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Repeat sequence in linker joining human heregulin-  
 betal residues 177-228 to M13 pIII residue 323

<400> 34  
 Gly Gly Gly Ser  
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<210> 35  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker joining human heregulin-betal residues 177-230  
 to M13 pIII residue 247

<400> 35  
 Gly Gly Gly Ser Gly Gly Gly  
 1 5

<210> 36  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Linker for ERbB-2 receptor-immunoglobulin fusion proteins

<400> 36

Thr Arg Asp Lys Thr  
1 5

<210> 37

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Enterokinase protease recognition site

<400> 37

Asp Asp Asp Asp Lys  
1 5

<210> 38

<211> 5

<212> PRT

<213> Homo sapiens

<400> 38

Ser His Leu Val Lys  
1 5

<210> 39

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1 residues 177-181

<400> 39

Trp Arg Leu Val Pro  
1 5

<210> 40

<211> 5

C1  
Cont



<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 40  
Trp Ser Leu Gln Pro  
1 5

<210> 41  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 41  
Trp Glu Leu Val Pro  
1 5

<210> 42  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 42  
Trp Ser Leu Val Lys  
1 5

<210> 43  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 43

Trp Ser Leu Ile Pro  
1 5

<210> 44

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 44

Trp Arg Leu Val Ala  
1 5

<210> 45

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 45

Trp Ala Leu Val Pro  
1 5

<210> 46

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 46

Cl  
Cont

Trp Ser Leu Gln Lys

1 5

<210> 47

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 47

Trp Glu Leu Val Ala

1 5

<210> 48

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 177-181

<400> 48

Trp Ser Leu Glu Pro

1 5

<210> 49

<211> 6

<212> PRT

<213> Homo sapiens

<400> 49

Ala Glu Lys Glu Lys Thr

1 5

<210> 50

<211> 6

<212> PRT

<213> Artificial Sequence

C1  
Cont

<220>

<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 50

Gly Val Gly Arg Asp Gly  
1 5

<210> 51

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 51

Gly Gly Glu Arg Glu Gly  
1 5

<210> 52

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 52

Gly Glu Glu Arg Glu Gly  
1 5

<210> 53

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 53  
 Gly Trp Asp Arg Glu Gly  
 1 5

<210> 54  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant sequence at human heregulin-beta1  
 residues 183-188

<400> 54  
 Gly Val Gln Arg Glu Gly  
 1 5

<210> 55  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant sequence at human heregulin-beta1  
 residues 183-188

<400> 55  
 Gly Glu Glu Arg Ala Gly  
 1 5

<210> 56  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Variant sequence at human heregulin-beta1  
 residues 183-188

<400> 56  
 Gly Lys Glu Arg Glu Gly  
 1 5

<210> 57  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 57  
Thr Asn Ser Arg Glu Gly  
1 5

<210> 58  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 58  
Asp Lys Ser Arg Glu Gly  
1 5

<210> 59  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 59  
Gly Glu Asp Arg Lys Gln  
1 5

<210> 60  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 183-188

<400> 60

Gly Arg Glu Arg Glu Gly

1 5

<210> 61

<211> 5

<212> PRT

<213> Homo sapiens

<400> 61

Val Asn Gly Gly Glu

1 5

<210> 62

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 191-195

<400> 62

Val Asn Gly Gly Glu

1 5

<210> 63

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 191-195

<400> 63

Val Asn Gly Gly Val

1 5

<210> 64  
<211> 5  
<212> PRT  
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<220>  
<223> Variant sequence at human heregulin-beta1  
residues 191-195

<400> 64  
Val Asn Gly Gly Gln  
1 5

<210> 65  
<211> 5  
<212> PRT  
<213> Homo sapiens

<400> 65  
Phe Met Val Lys Asp  
1 5

<210> 66  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 197-201

<400> 66  
Tyr Lys Val Arg Ile  
1 5

<210> 67  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1



residues 197-201

<400> 67

Phe Arg Val Lys Thr

1 5

<210> 68

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 197-201

<400> 68

Tyr Arg Val Lys Thr

1 5

<210> 69

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 197-201

<400> 69

Tyr Met Ile Lys Tyr

1 5

<210> 70

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 197-201

<400> 70

Tyr Met Val Lys Thr

1 5

<210> 71

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 197-201

<400> 71

Met Arg Val Arg Thr

1 5

<210> 72

<211> 5

<212> PRT

<213> Homo sapiens

<400> 72

Pro Ser Arg Tyr Leu

1 5

<210> 73

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 205-209

<400> 73

Thr Pro Tyr Leu Met

1 5

<210> 74

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 205-209

<400> 74

Tyr Gly Tyr Leu Met

1 5

<210> 75

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 205-209

<400> 75

Tyr Arg Tyr Arg Met

1 5

<210> 76

<211> 5

<212> PRT

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<220>

<223> Variant sequence at human heregulin-beta1  
residues 205-209

<400> 76

Thr His Tyr Arg Gly

1 5

<210> 77

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Variant sequence at human heregulin-beta1  
residues 205-209

<400> 77  
 Thr His Tyr Arg Met  
 1 5  
  
 <210> 78  
 <211> 5  
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 <213> Artificial Sequence  
  
 <220>  
 <223> Variant sequence at human heregulin-beta1  
 residues 205-209  
  
 <400> 78  
 Tyr Lys Tyr Arg Met  
 1 5  
  
 <210> 79  
 <211> 5  
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 <220>  
 <223> Variant sequence at human heregulin-beta1  
 residues 205-209  
  
 <400> 79  
 Thr Lys Tyr Arg Gly  
 1 5  
  
 <210> 80  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
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 <223> Variant sequence at human heregulin-beta1  
 residues 205-209  
  
 <400> 80  
 Tyr Lys Tyr Arg Leu  
 1 5

<210> 81  
<211> 6  
<212> PRT  
<213> Homo sapiens

<400> 81  
Lys Cys Pro Asn Glu Phe  
1 5

<210> 82  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 211-216

<400> 82  
Arg Cys Ser Leu Glu Phe  
1 5

<210> 83  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
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residues 211-216

<400> 83  
Arg Cys Ser Glu Glu Phe  
1 5

<210> 84  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 211-216

<400> 84  
Lys Cys Pro Lys Glu Met  
1 5

<210> 85  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 211-216

<400> 85  
Arg Cys Thr Val Glu Tyr  
1 5

<210> 86  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 211-216

<400> 86  
Arg Cys Thr Val Glu Tyr  
1 5

<210> 87  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 211-216

<400> 87  
Lys Cys Asn Ser Glu Phe  
1 5

<210> 88  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1  
residues 211-216

<400> 88  
Arg Cys Lys Lys Glu Phe  
1 5

<210> 89  
<211> 5  
<212> PRT  
<213> Homo sapiens

<400> 89  
Gln Asn Tyr Val Met  
1 5

<210> 90  
<211> 5  
<212> PRT  
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<220>  
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residues 222-226

<400> 90  
Gln Trp Tyr Val Ile  
1 5

<210> 91  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Variant sequence at human heregulin-beta1

residues 222-226

<400> 91

Gln His Tyr Val Ile

1 5

<210> 92

<211> 52

<212> PRT

<213> Homo sapiens

<400> 92

Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn

1 5 10 15

Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr

20 25 30

Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr

35 40 45

Val Met Ala Ser

50

<210> 93

<211> 645

<212> PRT

<213> Homo sapiens

<400> 93

Met Ser Glu Arg Lys Glu Gly Arg Gly Lys Gly Lys Gly Lys Lys Lys

1 5 10 15

Glu Arg Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser

20 25 30

Pro Ala Leu Pro Pro Gln Leu Lys Glu Met Lys Ser Gln Glu Ser Ala

35 40 45

Ala Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser

50 55 60

Ser Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys

65 70 75 80

Asn Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu

85 90 95

Leu Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys

100 105 110

Lys Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr

115 120 125



Ile Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu			
130	135	140	
Gly Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr			
145	150	155	160
Glu Gly Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser Thr Thr Gly Thr			
	165	170	175
Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn			
	180	185	190
Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr			
	195	200	205
Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr			
	210	215	220
Val Met Ala Ser Phe Tyr Lys His Leu Gly Ile Glu Phe Met Glu Ala			
225	230	235	240
Glu Glu Leu Tyr Gln Lys Arg Val Leu Thr Ile Thr Gly Ile Cys Ile			
	245	250	255
Ala Leu Leu Val Val Gly Ile Met Cys Val Val Ala Tyr Cys Lys Thr			
	260	265	270
Lys Lys Gln Arg Lys Lys Leu His Asp Arg Leu Arg Gln Ser Leu Arg			
	275	280	285
Ser Glu Arg Asn Asn Met Met Asn Ile Ala Asn Gly Pro His His Pro			
	290	295	300
Asn Pro Pro Pro Glu Asn Val Gln Leu Val Asn Gln Tyr Val Ser Lys			
305	310	315	320
Asn Val Ile Ser Ser Glu His Ile Val Glu Arg Glu Ala Glu Thr Ser			
	325	330	335
Phe Ser Thr Ser His Tyr Thr Ser Thr Ala His His Ser Thr Thr Val			
	340	345	350
Thr Gln Thr Pro Ser His Ser Trp Ser Asn Gly His Thr Glu Ser Ile			
	355	360	365
Leu Ser Glu Ser His Ser Val Ile Val Met Ser Ser Val Glu Asn Ser			
	370	375	380
Arg His Ser Ser Pro Thr Gly Gly Pro Arg Gly Arg Leu Asn Gly Thr			
385	390	395	400
Gly Gly Pro Arg Glu Cys Asn Ser Phe Leu Arg His Ala Arg Glu Thr			
	405	410	415
Pro Asp Ser Tyr Arg Asp Ser Pro His Ser Glu Arg Tyr Val Ser Ala			
	420	425	430
Met Thr Thr Pro Ala Arg Met Ser Pro Val Asp Phe His Thr Pro Ser			
	435	440	445
Ser Pro Lys Ser Pro Pro Ser Glu Met Ser Pro Pro Val Ser Ser Met			
	450	455	460

C1  
cont

Thr Val Ser Met Pro Ser Met Ala Val Ser Pro Phe Met Glu Glu Glu  
 465 470 475 480  
 Arg Pro Leu Leu Leu Val Thr Pro Pro Arg Leu Arg Glu Lys Lys Phe  
 485 490 495  
 Asp His His Pro Gln Gln Phe Ser Ser Phe His His Asn Pro Ala His  
 500 505 510  
 Asp Ser Asn Ser Leu Pro Ala Ser Pro Leu Arg Ile Val Glu Asp Glu  
 515 520 525  
 Glu Tyr Glu Thr Thr Gln Glu Tyr Glu Pro Ala Gln Glu Pro Val Lys  
 530 535 540  
 Lys Leu Ala Asn Ser Arg Arg Ala Lys Arg Thr Lys Pro Asn Gly His  
 545 550 555 560  
 Ile Ala Asn Arg Leu Glu Val Asp Ser Asn Thr Ser Ser Gln Ser Ser  
 565 570 575  
 Asn Ser Glu Ser Glu Thr Glu Asp Glu Arg Val Gly Glu Asp Thr Pro  
 580 585 590  
 Phe Leu Gly Ile Gln Asn Pro Leu Ala Ala Ser Leu Glu Ala Thr Pro  
 595 600 605  
 Ala Phe Arg Leu Ala Asp Ser Arg Thr Asn Pro Ala Gly Arg Phe Ser  
 610 615 620  
 Thr Gln Glu Glu Ile Gln Ala Arg Leu Ser Ser Val Ile Ala Asn Gln  
 625 630 635 640  
 Asp Pro Ile Ala Val  
 645

<210> 94  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 94

Gly Thr Ser His Leu Val Lys Cys Gly Trp Asp Arg Glu Gly Phe Cys  
 1 5 10 15  
 Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser  
 20 25 30  
 Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
 35 40 45  
 Asn Tyr Val Ile Ala Ser Phe Tyr  
 50 55

<210> 95  
 <211> 56  
 <212> PRT

<213> Homo sapiens

<400> 95

Gly Thr Ser His Leu Val Lys Cys Asp Lys Ser Arg Glu Gly Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser  
20 25 30  
Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
35 40 45  
Asn Tyr Val Ile Ala Ser Phe Tyr  
50 55

<210> 96

<211> 56

<212> PRT

<213> Homo sapiens

<400> 96

Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Tyr Lys Val Arg Ile Leu Ser Asn Pro Ser  
20 25 30  
Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
35 40 45  
Asn Tyr Val Ile Ala Ser Phe Tyr  
50 55

<210> 97

<211> 56

<212> PRT

<213> Homo sapiens

<400> 97

Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Tyr Gly  
20 25 30  
Tyr Leu Met Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
35 40 45  
Asn Tyr Val Met Ala Ser Phe Tyr  
50 55

<210> 98

<211> 56  
<212> PRT  
<213> Homo sapiens

<400> 98

Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Ala	Glu	Lys	Glu	Lys	Thr	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Phe	Met	Val	Lys	Asp	Leu	Ser	Asn	Tyr	Arg
			20					25					30		
Tyr	Arg	Met	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Ile	Ala	Ser	Phe	Tyr								
50							55								

<210> 99  
<211> 56  
<212> PRT  
<213> Homo sapiens

<400> 99

Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Ala	Glu	Lys	Glu	Lys	Thr	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Phe	Met	Val	Lys	Asp	Leu	Ser	Asn	Thr	His
			20					25					30		
Tyr	Arg	Met	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Met	Ala	Ser	Phe	Tyr								
50							55								

<210> 100  
<211> 56  
<212> PRT  
<213> Homo sapiens

<400> 100

Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Ala	Glu	Lys	Glu	Lys	Thr	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Phe	Met	Val	Lys	Asp	Leu	Ser	Asn	Thr	Lys
			20					25					30		
Tyr	Arg	Gly	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Met	Ala	Ser	Phe	Tyr								
50							55								

<210> 101  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 101  
 Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys  
 1 5 10 15  
 Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser  
 20 25 30  
 Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
 35 40 45  
 Trp Tyr Val Ile Ala Ser Phe Tyr  
 50 55

<210> 102  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 102  
 Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys  
 1 5 10 15  
 Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser  
 20 25 30  
 Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
 35 40 45  
 His Tyr Val Ile Ala Ser Phe Tyr  
 50 55

<210> 103  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 103  
 Gly Thr Trp Glu Leu Val Pro Cys Gly Trp Asp Arg Glu Gly Phe Cys  
 1 5 10 15  
 Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser  
 20 25 30  
 Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
 35 40 45

Asn Tyr Val Ile Ala Ser Phe Tyr  
50 55

<210> 104  
<211> 56  
<212> PRT  
<213> Homo sapiens

<400> 104  
Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Tyr Gly  
20 25 30  
Tyr Leu Met Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
35 40 45  
Asn Tyr Val Ile Ala Ser Phe Tyr  
50 55

<210> 105  
<211> 56  
<212> PRT  
<213> Homo sapiens

<400> 105  
Gly Thr Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Tyr Arg Val Lys Thr Leu Ser Asn Pro Ser  
20 25 30  
Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
35 40 45  
Asn Tyr Val Met Ala Ser Phe Tyr  
50 55

<210> 106  
<211> 56  
<212> PRT  
<213> Homo sapiens

<400> 106  
Gly Thr Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Tyr Gly  
20 25 30

Tyr Leu Met Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
 35 40 45  
 Asn Tyr Val Met Ala Ser Phe Tyr  
 50 55

<210> 107  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 107

Gly Thr Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys  
 1 5 10 15  
 Val Asn Gly Gly Glu Cys Tyr Arg Val Lys Thr Leu Ser Asn Tyr Gly  
 20 25 30  
 Tyr Leu Met Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
 35 40 45  
 Asn Tyr Val Met Ala Ser Phe Tyr  
 50 55

<210> 108  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 108

Gly Thr Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys  
 1 5 10 15  
 Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser  
 20 25 30  
 Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
 35 40 45  
 Asn Tyr Val Ile Ala Ser Phe Tyr  
 50 55

<210> 109  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 109

Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys  
 1 5 10 15

Val	Asn	Gly	Gly	Glu	Cys	Tyr	Arg	Val	Lys	Thr	Leu	Ser	Asn	Tyr	Gly
			20						25				30		
Tyr	Leu	Met	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Met	Ala	Ser	Phe	Tyr								
	50					55									

<210> 110

<211> 56

<212> PRT

<213> Homo sapiens

<400> 110

Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Ala	Glu	Lys	Glu	Lys	Thr	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Tyr	Arg	Val	Lys	Thr	Leu	Ser	Asn	Tyr	Gly
			20						25				30		
Tyr	Leu	Met	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Ile	Ala	Ser	Phe	Tyr								
	50					55									

<210> 111

<211> 56

<212> PRT

<213> Homo sapiens

<400> 111

Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Ala	Glu	Lys	Glu	Lys	Thr	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Tyr	Arg	Val	Lys	Thr	Leu	Ser	Asn	Pro	Ser
			20						25				30		
Arg	Tyr	Leu	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Ile	Ala	Ser	Phe	Tyr								
	50					55									

<210> 112

<211> 56

<212> PRT

<213> Homo sapiens

<400> 112



Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Gly	Glu	Glu	Arg	Glu	Gly	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Tyr	Arg	Val	Lys	Thr	Leu	Ser	Asn	Pro	Ser
		20						25					30		
Arg	Tyr	Leu	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Ile	Ala	Ser	Phe	Tyr								
		50					55								

<210> 113  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Gly	Glu	Glu	Arg	Glu	Gly	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Phe	Met	Val	Lys	Asp	Leu	Ser	Asn	Tyr	Gly
		20						25					30		
Tyr	Leu	Met	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Ile	Ala	Ser	Phe	Tyr								
		50					55								

<210> 114  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

Gly	Thr	Ser	His	Leu	Val	Lys	Cys	Gly	Glu	Glu	Arg	Glu	Gly	Phe	Cys
1				5					10					15	
Val	Asn	Gly	Gly	Glu	Cys	Tyr	Arg	Val	Lys	Thr	Leu	Ser	Asn	Tyr	Gly
		20						25					30		
Tyr	Leu	Met	Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln
		35					40					45			
Asn	Tyr	Val	Ile	Ala	Ser	Phe	Tyr								
		50					55								

<210> 115  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 115

Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Tyr Arg Val Lys Thr Leu Ser Asn Tyr Gly  
20 25 30  
Tyr Leu Met Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
35 40 45  
His Tyr Val Ile Ala Ser Phe Tyr  
50 55

<210> 116

<211> 56

<212> PRT

<213> Homo sapiens

<400> 116

Gly Thr Ser His Leu Val Lys Cys Gly Glu Glu Arg Glu Gly Phe Cys  
1 5 10 15  
Val Asn Gly Gly Glu Cys Tyr Arg Val Lys Thr Leu Ser Asn Tyr Gly  
20 25 30  
Tyr Leu Met Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln  
35 40 45  
His Tyr Val Ile Ala Ser Phe Tyr  
50 55